NORTHRUP EXHIBIT P

Cont

Results

M. Allen

Notes (Signal broke of several (not all) results photos with this pen (often (on front) was non permanent ink)

- PCR (HIV - MSP) worked well in integrated-heater devices, gel electrophoresis verified product. Some, but minimal Primer Dimer (esp due to known fact that device reaction mixture cycled 1-2 times, then at R.T. for ½ hr & prior to 20 cycles due to need to re-solder connections - new rxn mixture (30 µl) was added)

- was able to extract ~ 100% of aqueous phase with 200 µl (set at 30 µl) pipette & load 5-6 wells of electrophoresis channel

(*) → calculate power consumed in today's experiment compare to batteries

Other Discussion

last Tues w/ Ray Manella Lee (Cetus) along w/ Russ Higuchi, Bob Watson, Russ's technician, myself we tried homogeneous detection w/ video CCD over 460 thermal cycles

- pulsed N_2 - laser (ILEE Laser company, Switz) was tried

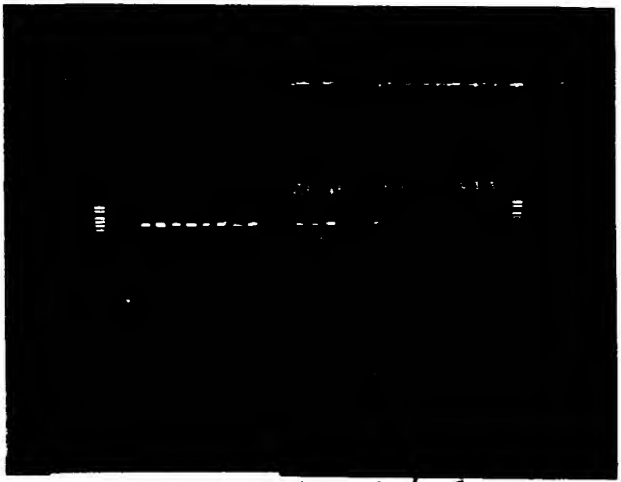
→ See LLNL Book (notebook) for details

Cont

Results (photos)
Devia PCR results positive

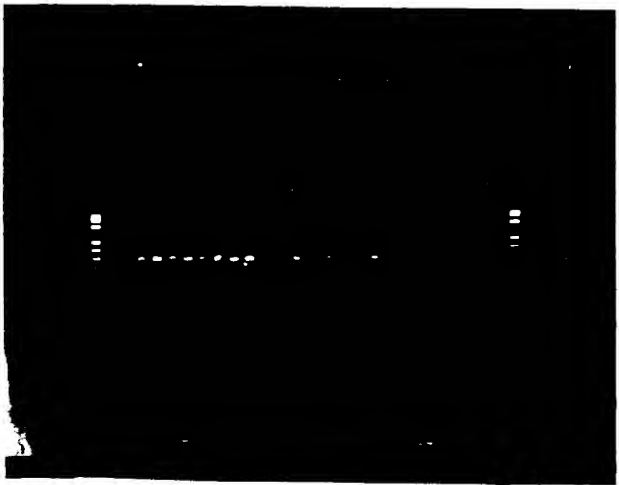
M. Allen 15

elec. T = 15 min



M. Allen T: 2 sec 4.6 3200

elec T = 40 min



M. Allen T: 1 sec 3200

taped recipe from Watson

Rxn per R. Watson	50 µl 10× Buffer	2
	50 µl 1 mM dATP	3
	50 µl M13	4
M. Ollis	10 µl 10×10 = 100 pmoles primer	5
	10 µl probe	6
	2½ µl (10×1.75 U/rxn 12.5) / (12.5/50 µl = 2×) — Taq	7
	327.5 H_2O	9
	500	

@ Celus M. Allen

Trying new PCR system
(more Temp forgiving)

142 bp product target on SS M13 from gag-region of HIV

1) Starting target = 10^8 copies in 5 µl

T = 96-55 (works at 88+) → 16-18 cycles is plenty

2) primers

old names:		new names	
SK 145	=	ph 07	10 pM/µl
SK 431	=	ph 08	

Reaction mixture: (500 µl)

500.0
-172½
327.5

50 µl 10 × Buffer w/ mgCl
" 1 mM dntps
" M13 w/ gag region of HIV
10 µl = 10 × 10 = 100 pmoles
10 µl (same Fwr) ph 07 / ph 08 ?
2½ µl = 10 × 1.25 U/µl Taq 12.5
329.5 ddH_2O
500 µl total rxn volume

M. Allen (cont)

1) re-use voltage (same device) as on March 30 (ie 3.17 V + 98°C) at 0.2A

Do only 20 cycles

A) Standards

10, 10, 20, 20, 30, 30, 40, 40

~1.5 µl oil (1-8)

B) Device 30 µl w ~ 90 µl oil

1-minute cycles at 3.17V
20-1 minute cycles (A-E) 0.2A

Electrophoresis

well-problem

P std 0 0 1 2 3 4 5 6 7 8 0 0 A B C D D E + std 0 0

1a) Had to re-solder device wire connectors after 2-cycles fix time ~ ½ hour rxn was at Room temp

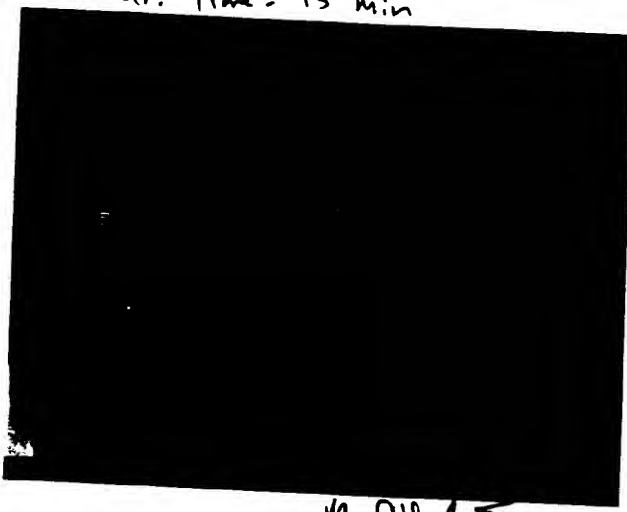
Results - ① formed product in both stds and in wells
② wells (and 1) std had less bright primer-dimers
③ device provided ~6-5 µl gel

See next 2 pages:

Coat results (photos)

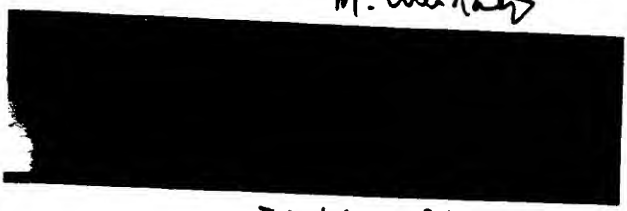
M. Allen

Electr. Time = 15 min



T = 1 sec 4.6 3200

M. Allen



T = 1 sec 5.6 3200

#1 Loaned to Mila Ching